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Witness: Michael J. Abbott
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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

WATER, SEWER, AND STEAM DEPARTMENT

DIRECT TESTIMONY

OF

MICHAEL J. ABBOTT

**LIBERTY UTILITIES (Missouri Water) LLC,
d/b/a Liberty**

CASE NO. WR-2024-0104

*Jefferson City, Missouri
August 2024*

1 **EXECUTIVE SUMMARY**

2 Q. What is the purpose of your direct testimony?

3 A. The purpose of my testimony is to describe Commission Staff's ("Staff") call
4 for water corporations to develop, maintain, and implement activities and measurable actions
5 for the improvement of drought resiliency. Drought impacts can range into the millions and
6 billions of dollars in damages and are among the costliest of weather and climate disasters.
7 Since 1980 to 2016 there have been 460 drought related impacts in Missouri with 240 being
8 classified as agriculture, 121 classified as water supply and quantity, 104 classified as relief,
9 response, and restrictions.¹

10 Building resilience to drought includes planning, preparation, communication,
11 coordination, and operational expertise. The development of local and regional drought
12 response plans to identify potential impacts from drought, weakness in the water system, and
13 goals to minimize impacts can greatly influence that adequate services are not disrupted or
14 minimally disrupted.

15 **RESOURCE PLANNING**

16 Q. What is drought resiliency?

17 A. Drought resiliency is the ability of a water entity to manage and even
18 significantly reduce negative impacts caused by drought by developing and implementing
19 mitigating strategies, plans, and actions.

20 Q. Why is developing and implementing drought resilience strategies, plans, and
21 actions important to water entities?

¹ Missouri Drought Mitigation and Response Plan 2023; <https://dnr.mo.gov/document-search/missouri-drought-mitigation-response-plan-2023>

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1 A. On average, as of 2020, there are 6.1 million people and numerous businesses in
2 Missouri consuming approximately 3.2 billion gallons of water each day. Of the 3.2 billion
3 gallons demand, 78 percent is supplied by groundwater with the remaining 22 percent being
4 supplied by surface water. Based on growth in population, employment, and expansion of
5 agricultural irrigation and other business sectors, statewide consumptive demand is forecasted
6 to increase by 18 percent or by 583 million gallons per day by 2060.²

7 Q. Does Missouri have an abundant supply of water?

8 A. Generally, yes; however, there are regions of Missouri like the Southwest area
9 of Missouri is experiencing a slow and steady decline in groundwater levels. Another example
10 of water supply decline can be found in the Northwest region of Missouri. The city of Hamilton
11 has enacted mandatory conservation measures based on significant decline in the reservoir
12 levels in Hamilton Reservoir, which serves as a public water supply source for portions of
13 Caldwell County. Missouri has been subject to extensive adverse impacts during periods of
14 drought, which have resulted in times that areas of Missouri have struggled to meet demand
15 even in years with average precipitation and streamflow owing to insufficient supply,
16 inadequate infrastructure, and poor water quality, with drought conditions only exacerbating
17 these issues.³

18 Q. What are the major categories of drought impacts?

19 A. There are three (3) major categories for drought impacts, which are: Economic,
20 Environmental, and Social.⁴ Each major category carries significant costs and impacts, and can
21 lead to conflicts due to the lack of water supply (e.g., agriculture versus human consumption).

² Missouri Drought Mitigation and Response Plan 2023; <https://dnr.mo.gov/document-search/missouri-drought-mitigation-response-plan-2023>

³ Ibid.

⁴ Ibid.

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1 Economic impacts include but are not limited to increased cost for hauling water and
2 transportation. Additionally, water entities and business will experience decrease in revenues
3 due to water restrictions. Environmental impacts include such as aquifer depletion and
4 increased algal growth with lower dissolved oxygen and increased turbidity. Social impacts
5 from drought include items such as negative human health impacts and conflicts due to lack of
6 water supply.

7 Q. What are the important areas to increase drought resiliency?

8 A. Drought management strategies greatly assist in reducing the impacts and are
9 separated into three (3) categories: Mitigation, Impact Assessment, and Response. Mitigation
10 includes actions and strategies performed prior to a drought occurring and focus on reducing or
11 avoiding impacts from drought, increasing resiliency, and reducing drought vulnerability.
12 Impact Assessment is utilized to identify and quantify impacts during a drought and assist in
13 identifying and prioritizing response options and the allocation of resources. Response
14 activities are initiated during or after a drought to reduce or eliminate the impacts as they occur
15 and response to emergency situations because of reduced water supply.⁵ Actions and strategies
16 Liberty Utilities (Missouri Water), LLC d/b/a Liberty (“Liberty Water”) could use to implement
17 these measures will be discussed later in this testimony.

18 Q. Why is it necessary for water corporations to implement strategies, plans, and
19 actions for drought resiliency?

20 A. In accordance with Section 393.130.1, RSMo, water corporations shall furnish
21 and provide such service instrumentalities and facilities as shall be safe and adequate and in all
22 respects just and reasonable. With respect to this statute, Staff interprets “safe” to imply that

⁵ Missouri Drought Mitigation and Response Plan 2023; <https://dnr.mo.gov/document-search/missouri-drought-mitigation-response-plan-2023>.

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1 utility services provided by water corporations must not pose any undue risks to the public.
2 This includes ensuring that infrastructure, equipment, and operations meet safety standards.
3 The term “adequate” is more important and the driving factor when addressing drought
4 assessment and resiliency. Staff also refers to adequate as services that must be sufficient to
5 meet the needs of the customer. This encompasses three areas: reliability, capacity, and quality.

6 Q. How does reliability, capacity, and quality relate to drought resiliency?

7 A. Reliability means that utility services should be dependable and available when
8 needed. Capacity means the infrastructure should have the capacity to handle peak demands.
9 Quality means that water should be clean. These three areas establish trust between the water
10 corporation and the customer. The customer pays for water services and the water corporation
11 provides safe and adequate services. Unlike other natural disasters and emergencies, drought
12 is not an immediate natural disaster like severe weather or earthquakes. Drought is a slow build
13 natural disaster, and due to its prolonged building, trend information develops that allows for
14 preparation and plan development. This allows water corporations to plan and take necessary
15 pre-drought actions ensuring adequate services to customers in the areas of reliability, capacity,
16 and quality are not reduced.

17 Q. Does Liberty Water have satisfactory drought resiliency?

18 A. No. While it is important to note that the Commission does not have any statute
19 or regulation that requires water utilities to develop and implement resiliency, this does not
20 remove the necessity of water for customers during periods of drought or prolonged drought.
21 Staff’s unsatisfactory determination is based on Liberty Water’s responses to Staff Data
22 Requests (DR) specific for drought resiliency and focuses on Liberty Water’s unconsolidated
23 strategies and plans, which is documented with inconsistencies from DR responses.

24 Q. Is there an example of inconsistency?

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1 A. Yes. Liberty Water's response to Staff DR No. 0092 indicates that Liberty
2 Water's ground water supply is not affected by surface drought conditions and that its approach
3 to drought resiliency is water conservation. Liberty Water also indicated that there is not a
4 current specific plan in Missouri for drought resiliency but that it can utilize communication
5 plans, resources, and information in other Liberty Water jurisdictions with arid climates prone
6 to drought should they be needed. However, in response to Staff DR No. 0097, Liberty Water
7 indicates that its conservation plans are consistent with the five (5) phases of the Missouri
8 DNR's Drought Response System ("DNR Drought Response").

9 Q. Why is Liberty Water's responses to Staff DR Nos. 0092 and 0097 inconsistent?

10 A. The responses are inconsistent due to the significant variation between Liberty
11 Water's response to Staff DR Nos. 0092 and 00097. Initially Liberty Water states it is not
12 affected by surface drought, its resiliency plan focuses on water conservation, and that it does
13 not have a current plan in Missouri for drought resiliency. Liberty Water then claims its
14 conservation plan is consistent with DNR Drought Response, which Liberty Water
15 subsequently submitted its DNR Drought Response in response to Staff DR No. 0177. It should
16 be noted that Liberty Water's responses to Staff DR Nos. 0092 and 0097 were received on the
17 same day and by the same respondent.

18 Q. In addition to inconsistencies are there additional issues with drought resiliency?

19 A. Yes. Information is not consolidated in one location.

20 Q. Can you provide an example of information not being consolidated?

21 A. In response to Staff DR No. 0096, Liberty Water indicates that it provides
22 education to customers regarding actions that customers can take to conserve water through
23 Liberty Water's website and through customer email, newsletters, and social media.
24 Liberty Water continues in response to this DR that the communication is not specific to

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1 drought resiliency. However, Liberty Water also states that in the event of a prolonged
2 drought, Liberty Water will use its communication platforms, as it deems appropriate,
3 work collaboratively with host communities regarding any need for water restrictions or other
4 efforts to encourage conservation to help ensure an adequate supply of drinking water.
5 Staff accessed Liberty Water's webpage to locate water conservation information.
6 After selecting the State of Missouri and service area, Liberty Water's webpage did provide a
7 Ways to Save header with a drop-down carrot that includes a section about Saving Water Tips.
8 However, the information provided appears to be more geared toward how customers can save
9 money through conservation efforts. Additionally, under the Safety Header, Liberty Water's
10 webpage provides a Kid's Corner with two (2) videos along with activities focused on water
11 conservation. While both are good approaches to water conservation, they are located in
12 different locations.

13 Q. How can Liberty Water achieve drought resiliency?

14 A. Liberty Water should continue promoting water conservation but would benefit
15 from developing drought resiliency strategies as well as locating those strategies in one (1)
16 consolidated plan document as this will reduce confusion on appropriate actions and next steps.

17 Q. Are there other actions Liberty Water can take to improve its drought resiliency?

18 A. Yes. Drought resiliency plans should also be specific to customer actions and
19 Liberty Water actions. Water conservation actions and the implementation of the DNR Drought
20 Response are great starting points. Additionally, Liberty Water should communicate with
21 DNR's Drought Assessment Committee or seek to provide representation. This would provide
22 Liberty Water with knowledge of the DNR Drought Response System map showing drought
23 impacts on Missouri counties and corresponding Drought Response System phases that should

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1 be implemented. Liberty Water will also need to be more proactive regarding the following
2 drought management strategy categories of: Mitigation, Impact Assessment, and Response.

3 Q. How can Liberty Water be more proactive with respect to the drought
4 management category of Mitigation?

5 A. Mitigation includes actions and strategies performed before drought occurs.
6 These activities focus on reducing or avoiding the impacts from drought, increase resiliency,
7 and reduce drought vulnerability. Mitigation actions and strategies that Liberty Water could
8 implement include:

- 9 a) Provide conservation and water efficiency technical assistance;
- 10 b) Provide or prioritize funding for implementing water conservation programs;
- 11 c) Provide or prioritize funding for projects that increase storage, diversify
12 supplies, promote water reuse, or interconnections;
- 13 d) Support water supply regionalization; and
- 14 e) Require development of drought management plans for individual water
15 service areas.

16 Q. How can Liberty Water be more proactive with respect to drought management
17 category of Impact Assessment?

18 A. Impact Assessments are actions performed to identify and quantify impacts
19 during a drought. The assessment of impacts assists in identifying and prioritizing response
20 options and the allocation of resources and can provide information used in future droughts.

21 Impact Assessment actions and strategies that Liberty Water could implement include:

- 22 a) Develop specific protocols for data gathering and reporting in impacted
23 service areas;
- 24 b) Review the effectiveness of pre-drought mitigation efforts in reducing impacts;

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- 1 c) Support and advertise reporting tools;
- 2 d) Assess impacts to groundwater; and
- 3 e) Proactive involvement with state and federal agencies implementing drought
- 4 resiliency actions.

5 Q. How can Liberty Water be more proactive with respect to the drought

6 management category of Response?

7 A. Response is initiated during or after a drought to reduce or eliminate impacts as

8 they occur or responding to emergency situations due to water deficiency. Response actions

9 and strategies include:

- 10 a) Provide emergency funding or implement interconnections for at risk water
- 11 service areas;
- 12 b) Enact policy recommending voluntary water restrictions or require mandatory
- 13 restrictions for nonessential water use;
- 14 c) Provide technical assistance for industrial water use or process modifications;
- 15 d) Improve leak control efforts and water monitoring; and
- 16 e) Provide technical assistance to identify alternative water supplies or implement
- 17 alternative water supply sources.

18 Q. What are some other items or actions Liberty Water should consider with regards

19 to improving drought resiliency?

20 A. The implementation of actions and strategies above or similar will significantly

21 improve Liberty Water's drought resiliency. But it is Staff's position that unifying these efforts

22 under a company plan, with timelines, budgets, pertinent details specific to particular systems,

23 and company resource commitments, is an essential best practice for all water utilities with the

24 means to do so.

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1 Q. Is such a plan static?

2 A. No, a Drought Resiliency Plan should be updated as Liberty Water's needs and
3 resources change. Things like customer growth, the addition of new water resources, changes
4 in customer use patterns, aging infrastructure, and other variables mean that a regular review of
5 the Plan will be necessary. The frequency of such a review would vary depending on how
6 quickly the variables change for a particular company.

7 Q. Is Staff recommending the Commission order Liberty Water to develop a
8 drought resiliency plan?

9 A. Yes. Staff recommends that Liberty Water be required to file such a plan in this
10 case docket within one (1) year of the Commission Order for this rate case. Staff further
11 recommends that this plan be updated, as Liberty Water deems necessary, and the updates
12 should be filed with its subsequent rate cases.

13 Q. Does this conclude your direct testimony?

14 A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Request of Liberty Utilities)
(Missouri Water) LLC d/b/a Liberty for) Case No. WR-2024-0104
Authority to Implement a General Rate)
Increase for Water and Wastewater Service)
Provided in its Missouri Service Areas)

AFFIDAVIT OF MICHAEL J. ABBOTT

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW MICHAEL J. ABBOTT and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Direct Testimony of Michael J. Abbott*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

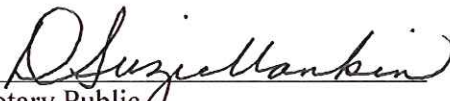


MICHAEL J. ABBOTT

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 12th day of August 2024.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070



Notary Public

Michael J. Abbott

I serve as the Senior Project Manager Regulatory for the Water, Sewer, & Steam Department, in the Industry Analysis Division of the Missouri Public Service Commission. I have been employed by the State of Missouri for 19 years, and have been with the Commission five months. My duties as Senior Project Manager involve all aspects of the Commission's regulation of the water, sewer, and steam industries including customer complaints, drafting and reviewing testimony, drafting rules policy, and working with the utilities to promote best practices in their provision of safe and adequate service at just and reasonable rates.

Educational Background and Work Experience

I have a Bachelor of Science degree in Environmental Science from Southeast Missouri State University. Prior to joining the Public Service Commission I was employed by the Missouri Department of Natural Resources from 2004-2024, as an Environmental Specialist, Unit Chief, and Section Manager. During my time with the Department of Natural Resources I worked in compliance and enforcement, industrial and domestic wastewater permitting, data management unit chief, municipal separate storm sewer system scientist, and eventually oversaw a staff of twenty-six Permit Writers and administrative support. I have served as expert witness before the Administrative Hearing Commission, as well as expert witness in State enforcement cases.

Previous Testimony Before the Public Service Commission

Not applicable. I have not provided testimony before the Public Service Commission.